

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Appl. No.: 10/674,908 Confirmation No.: 9006
Applicant(s): Crooks *et al.*
Filed: September 30, 2003
Art Unit: 1731
Examiner: Lazorcik, Jason L.
Title: FILTERED CIGARETTE INCORPORATING AN ADSORBENT
MATERIAL

Docket No.: 030627/267420
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Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

REPLY BRIEF UNDER 37 CFR § 1.193

The following comments are offered in response to the Examiner's Answer mailed on October 31, 2007. These comments are an extension of, and in addition to, the arguments presented in the Appeal Brief filed on July 25, 2007.

First, with respect to the Examiner's reference to the KSR decision, it is noted that the Supreme Court did not totally reject the well-established "teaching, suggestion, or motivation" test, but merely cautioned against its rigid application. The May 3, 2007, memorandum from Deputy Commissioner Focarino to the Technology Center directors confirmed that the Office must continue to explicitly explain the reason why one of ordinary skill in the art would combine prior art elements in the manner claimed.

It is also noted that the *Ex parte Smith* decision cited by the Examiner is not applicable to the present case. In *Smith*, the Board held that the claimed invention was merely a combination of known elements that, when combined, yielded predictable results. The Board also determined that the cited art did not teach away from the claimed combination. As Applicants have argued in both the Appeal Brief and hereinbelow, there is strong evidence that the cited art does in fact teach away from the combination of elements relied upon by the Examiner. Still further, Applicants have presented evidence of surprising results that weigh heavily against a finding that the combination of prior art elements yields "predicable" results.

Applicants continue to respectfully disagree with the Examiner's view of the cited art. In particular, Applicants again stress that there is nothing suggesting the specific arrangement of elements from the Counts, Zhuang, and Yang references that would be required in order to arrive at the presently-claimed invention. In particular, Applicants again note that the Zhuang and Yang references provide no guidance or suggestion as to how the filter elements described in each of those references could be incorporated into the Counts filter relative to one another. The Examiner appears to address this argument by stating that such an arrangement would be suggested by the art because Yang teaches a selective sorbent material and the Zhuang filter element is explicitly taught to enhance the filtration selectivity of "adjacent" sorbent segments. Applicants respectfully submit that this is a misrepresentation of the Zhuang reference. The use of the term "adjacent" in the Zhuang reference unfailingly refers to the adjacent monolithic sorbent segments 32 (i.e., the two monolithic segments are described as being adjacent to each other). There is no suggestion in the Zhuang reference that the Zhuang filter element is intended to enhance the filtration selectivity of some other "adjacent" sorbent material that is not disclosed in the Zhuang reference. In particular, there is certainly nothing in the Zhuang reference to suggest that the presence of monolithic sorbent segments 32 would enhance selectivity of the sorbent material of Yang. Thus, Applicants continue to strongly object to the suggestion that the combined teachings of the three cited references would lead one of ordinary skill in the art to the claimed invention without the benefit of hindsight. Simply stated, Applicants do not believe that the cited art suggests the claimed filter element arrangement with sufficient specificity to render it obvious.

Applicants also continue to object to reliance on the Keith reference as providing motivation to amend the Zhuang reference. The Examiner continues to state that it would be obvious to utilize a fibrous tow material based on the Keith reference for two reasons. First, the Examiner states that the mere fact that fibrous tow materials are commonly utilized provides sufficient motivation for this modification. However, such an argument ignores the teachings of the cited art, and thus must be dismissed. In particular, as noted previously, the Zhuang reference itself specifically discusses conventional fibrous filter elements, and yet does not remotely suggest that such materials will be suitable for the monolithic sorbent segments 32 taught therein. Instead, it is quite clear that the Zhuang reference is intended to provide selective

filtration of certain gas-phase components of mainstream cigarette smoke. Cellulose acetate tow is known to be essentially non-selective. In fact, the cited Keith reference itself, on page 14 and in Fig. 8, indicates that conventional fibrous tow filters lack selective removal characteristics. The Keith reference expressly states that “non-volatile materials” such as fibrous tow materials are “not likely candidates for selective filtration, and experimentally we find little evidence of their selective removal.” The data in Fig. 8 is interpreted as illustrating an average selectivity factor for such materials that is “uniformly quite close to one, which is an indication of non-preferential removal.” Thus, it is quite clear that the combined teachings of Keith and Zhuang would not motivate anyone to replace the monolithic sorbent segments 32 of the Zhuang reference with a fibrous tow material of any kind.

The Examiner’s main rebuttal appears to be based on a very strained interpretation of the Zhuang reference, and focuses on the use of the word “comprise” in column 4 of the Zhuang reference, and the fact that the Zhuang reference does not expressly exclude conventional fibrous tow materials. Applicants do not believe that one of ordinary skill in the art would interpret Zhuang in this manner, and particularly object to the Examiner’s reliance on a single word in a single line of the Zhuang reference as somehow carrying more weight than the overall teachings of the entire reference. One must conclude that the Zhuang reference’s intent is to construct sorbent segments made of a material that is much more selective for certain gas-phase constituents of cigarette smoke than conventional tow materials. Zhuang is very clear on this point. The fact that it may refer to those filter elements as “comprising” certain materials, does not take away from this conclusion. Further, the fact that the Zhuang reference does not expressly exclude fibrous tow materials from use in the construction of filter element 30 is hardly evidence of how one of ordinary skill in the art would interpret the teachings of Zhuang.

Applicants also note that the Zhuang reference repeatedly refers to the sorbent segments 32 as “monolithic.” One of the common definitions of monolithic is “constituting or acting as a single, often rigid uniform whole” (American Heritage Dictionary, 3rd Ed., 1993). This definition makes sense in light of the methods of making the monolithic segments disclosed in the Zhuang reference. As noted in columns 9-11, the monolithic sorbent segments are made through a resin curing process that would be expected to produce a solid, rigid structure. Again, the description of the monolithic sorbent segments 32 in this manner clearly suggests that fibrous

tow materials are not intended to be encompassed and, in fact, would be viewed as quite distinct from the intended structure in the Zhuang reference.

Applicants are also confused by the Examiner's response to the evidence of unexpected results. The Examiner merely shrugs off this evidence and again states the Office's position that the claimed filter configuration would be a "merely obvious approach." This is not an adequate response.

One cannot dismiss evidence of unexpected results by again pointing to the references and stating that the claimed invention is obvious. Evidence describing surprising or unexpected results can overcome an obviousness rejection, even when a *prima facie* case of obviousness has been established, which Applicants obviously do not admit in this case. The Examiner has failed to even address the substance of the unexpected results set forth in the application, such as in Example 4. When compared to a cigarette of Example 1, which comprises a conventional "plug/space/plug" arrangement, the specification clearly illustrates that the use of a hollow compartment upstream from a granular sorbent material provides a greater reduction of certain vapor-phase mainstream smoke components. The Examiner has failed to explain how the Office can simply dismiss this evidence virtually without comment.

In light of the foregoing, and in addition to the arguments set forth in the Appeal Brief, Applicants again respectfully submit that the claims of record are patentable over the cited references. As a result, it is respectfully requested that the Board of Patent Appeals and Interferences reverse the final rejection of the pending claims.

Respectfully submitted,

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